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EXAMINER
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SCHUBERT, KEVIN R

ART UNIT	PAPER NUMBER
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2137

DATE MAILED: 09/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/927,999

Applicant(s)

DIAB ET AL.

Examiner

Kevin Schubert

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3, 6-12, 15-20 and 22-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-12, 15-20, and 22-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |  |
|--|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                        |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____   |

### DETAILED ACTION

Claims 1-3,6-12,15-20, and 22-26 have been considered. In response to the applicant's phone call on 8/29/05, the examiner has removed the final rejection made on 7/1/05. However, after careful consideration the examiner still maintains the rejections of the previous action.

#### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 20 is rejected under 35 U.S.C. 102(b) as being anticipated by Walmsley, U.S. Patent No. 6,816,968.

As per claim 20, the applicant describes a small form factor pluggable module comprising the following limitations which are anticipated by Walmsley:

a) operating circuitry (Col 24, lines 55-63);

b) a memory, coupled to the operating circuitry, that stores vendor data including (i) an error-checking value and (ii) a non-error checking magic code which is generated by performing a magic code operation on at least a portion of the vendor data and a magic key (Col 51, lines 29-34; Col 24, lines 55-63; Col 34, lines 30-32);

Though the claim can be met in alternative ways by Walmsley, to cite one example the error-checking value could be the random number which is used to authenticate a module. The non-error checking magic code could be the encryption of the random number with the first secret key before it is sent to the untrusted module. Error-checking is actually done with the signature data generated by the second secret key (Col 24, lines 50-67).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3,6-7,10-12,15-16,19, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walmsley, U.S. Patent No. 6,816,968, in view of Gormish, U.S. Patent No. 6,073,118.

As per claims 1,10,19, and 22, the applicant describes a method for verifying that a module is from an approved vendor comprising the following steps which are anticipated by Walmsley in view of Gormish:

- a) obtaining vendor data and a first magic code from a module (Walmsley: Col 24, lines 55-60);
- b) generating a second magic code based on the vendor data (Walmsley: Col 24, lines 61-63);
- c) outputting a magic code valid signal when the second magic code matches the first magic code, and a magic code invalid signal when the second magic code does not match the first magic code (Walmsley: Col 24, lines 65-67; Col 25, lines 1-5);
- d) forming the second magic code based on the module serial number (Walmsley: Col 55, lines 3-6);
- e) obtaining a second serial number from a second module (Walmsley: Col 55, lines 3-6);
- f) outputting a serial number valid signal when the module serial number of the vendor data does not match the second serial number from the second module, and a second serial number invalid signal when the serial number of the vendor data matches the second serial number from the second module (Gormish: Col 6, lines 32-49);

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Walmsley discloses a system in which a module such as a printer cartridge is installed in a printer and authentication tests are performed on the module to compute a first magic code (parts a through c). Walmsley also discloses that the printer cartridge sends a message which includes a serial number with the generated first magic code. The message is encrypted to form a second magic code (part d), and the second magic code is compared with the first magic code generated at the untrusted module. If another module, such as a second print cartridge, is installed in the Walmsley system a second serial number would be obtained from the second module and authentication of the second module would proceed in the same manner as the authentication of the first module.

Walmsley, however, does not disclose part f. Though Walmsley discloses that a serial number is received at the authentication site and serial numbers of different modules should be different (Col 55, lines 3-6), he provides no means for checking to make sure that the serial number has not been used before as disclosed in part f.

Gormish discloses the idea of keeping a log of received serial numbers, checking to make sure a serial number has not been received before, and sending a confirmation signal based on the check. Combining the ideas of Gormish with Walmsley allows for the serial number received at the authentication site to be checked to confirm uniqueness as desired by Walmsley (Col 55, lines 3-6). It would have been obvious to one of ordinary skill in the art at the time the invention was filed to combine the ideas of Gormish with those of Walmsley in the case where a module, such as a printer cartridge, can only be installed once in a system. This would be advantageous in a system because it would prevent a user from manipulating a print cartridge (ie taking it out and using it in another machine) since a user would only be able to install a print cartridge once.

As per claims 2,7,11, and 16 the applicant describes the method of claims 1,6,10, and 16, which are anticipated by Walmsley in view of Gormish, with the following additional limitations that are met by Walmsley:

- a) reading the magic key from the memory of the computerized device (Col 24, lines 61-63);

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b) forming the second magic code based on the magic key and the vendor data (Col 24, lines 61-63);

The applicant should note that both the trusted authentication chip, which generates the second magic code, and the untrusted authentication chip, which generates the first magic code, both have two secret keys stored in memory. The second secret key (magic key) is used to generate the first and second magic codes.

As per claims 3 and 12, the applicant describes the method of claims 2 and 11, which are anticipated by Walmsley in view of Gormish, with the following additional limitation which is also met by Walmsley:

Performing a message-digest algorithm operation on the magic key and the vendor data (Col 38, lines 53-63; Fig 6);

Fig 6 illustrates an embodiment of the invention where the chip being authenticated sends the vendor data (M) and the first magic code (Sk2 [R | M]) to the trusted chip (63 of Fig 6). The applicant should note that the first magic code is a signature algorithm as described in Col 38, lines 53-63. A signature algorithm is a message-digest algorithm with encryption. A variety of hash, or digest, algorithms which can be used are described in the Background to the Invention by Walmsley and the Summary of the Invention (Col 25, lines 31-36).

As per claims 6 and 15, the applicant describes the method of claims 1 and 10, which are anticipated by Walmsley in view of Gormish, with the following additional limitation which is also anticipated by Walmsley:

Forming the second magic code based on the vendor identification number, the character string representing the vendor name, and the module serial number (Col 24, lines 61-63; Col 55, lines 3-6);

As per claims 8,9,17, and 18, the applicant describes the method of claims 1 and 10, which are anticipated by Walmsley in view of Gormish, with the following additional limitation:

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a) reading the vendor data from the non-volatile memory of the small form factor pluggable component (Walmsley: Col 24, lines 56-64; Col 26, lines 36-43);

Walmsley in view of Gormish disclose a device which is authenticated. Walmsley in view of Gormish, however, do not disclose that the device is particularly a small-form factor pluggable device. The examiner takes official notice because it is well-known that a small-form factor pluggable device can be authenticated.

Claims 1,10,19, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walmsley in view of Sekiya, U.S. Patent No. 6,484,128.

As per claims 1,10,19, and 22, the applicant describes a method for verifying that a module is from an approved vendor comprising the following steps which are anticipated by Walmsley in view of Sekiya:

- a) obtaining vendor data and a first magic code from a module (Col 24, lines 55-60);
- b) generating a second magic code based on the vendor data (Col 24, lines 61-63);
- c) outputting a magic code valid signal when the second magic code matches the first magic code, and a magic code invalid signal when the second magic code does not match the first magic code (Col 24, lines 65-67; Col 25, lines 1-5);
- d) forming the second magic code based on the module serial number (Col 55, lines 3-6);
- e) obtaining a second serial number from a second module (Col 55, lines 3-6);
- f) outputting a serial number valid signal when the module serial number of the vendor data does not match the second serial number from the second module, and a second serial number invalid signal when the serial number of the vendor data matches the second serial number from the second module (Sekiya: Col 7, line 37 to Col 8, line 67);

Walmsley discloses all the limitations of parts a through e. However, Walmsley does not disclose the particulars of part f. Sekiya discloses a module authentication system in which a plurality of modules are authenticated as being from approved vendors based on vendor identification data such as version

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numbers (serial numbers) and vendor names which are received from the modules. When a module is installed, the vendor data is obtained from the module and sent to an approval site where the vendor name and version number (serial number) are compared to stored data on similar modules in the system which have been known to cause problems. If a match occurs, the system transmits a fail signal (see Fig 20) so that a new module can be installed.

For example, if a new module is installed which has version number 1234 and is from company A, the vendor data is obtained and compared to stored vendor data to see if there is a history of a problem with that module. If the version number and company name of the module have been logged as having problems, the system transmits a fail signal (see Fig 20) and requests that a module from another vendor be installed. If the version number and the company name of the module have not been logged as having problems and no match is found, the module is valid.

It would have been obvious to one of ordinary skill in the art at the time the invention was filed to combine the ideas of Sekiya with those of Walmsley in the case where a particular module (such as a color cartridge from company A should not be installed because there is logged record of problems with the module.

Claims 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walmsley in view of Gormish in further view of Menezes (Menezes, Alfred J. Handbook of Applied Cryptography. CRC Press. Washington DC. 1997. page 363) in further view of Sekiya.

As per claims 23-26, the applicant describes the method of claims 1,10,19, and 22, which are met by Walmsley in view of Gormish, with the following limitations which are met by Walmsley, Gormish, Menezes, and Sekiya:

a) the module are respective first and second communications transceivers (Walmsley: Col 92, lines 24-25);

b) the vendor data and the first magic code are obtained from a non-volatile memory in the first communications transceiver component (Walmsley: Col 24, lines 55-60);



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c) the vendor data includes data from a vendor name field, a vendor identification number field, and an error-checking field (Walmsley: Col 55, lines 3-6; Sekiya: Col 5, lines 43-52; Menezes: page 363);

d) the generating and outputting steps are performed as part of a magic code verification routine upon successful completion of an error-checking routine performed on the vendor data (Menezes: page 363);

e) performing the error-checking routine on the vendor data (Menezes: page 363);

f) if during the magic code verification routine the first magic code does not match the second magic code, then identifying the first communications transceiver component as not being from an approved vendor (Walmsley: Col 24, line 65 to Col 25, line 5);

g) if during the magic code verification routine the first magic code does match the second magic code, then repeating the preceding steps and the steps of claim 1 for the second communications transceiver component (Sekiya: Col 11, lines 3-17; Walmsley: Col 24, line 65 to Col 25, line 5);

h) the serial number valid signal indicates that the first communications transceiver component has been identified as being from an approved vendor (Gormish: Col 6, lines 33-49);

i) the serial number invalid signal indicates that the first communications transceiver component has been identified as not being from an approved vendor (Gormish: Col 6, lines 33-49);

j) the step of outputting the serial number valid signal and serial number invalid signal is performed only if the first magic code matches the second magic code during the magic code verification routine for both the first and second communications transceiver components (Gormish: Col 6, lines 33-49);

Walmsley in view of Gormish do not disclose that the vendor data contains an error-checking field. Menezes discloses the use of an error-checking field such as a CRC checksum. It would have been obvious to one of ordinary skill in the art at the time the invention was filed to combine the ideas of Menezes with those of Walmsley in view of Gormish because doing so prevents unnecessary errors in the vendor data.

Walmsley in view of Gormish in further view of Menezes do not disclose that the vendor data contains a name field. Sekiya discloses the use of a module having a vendor-name field. It would have

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been obvious to one of ordinary skill in the art at the time the invention was filed to combine the ideas of Sekiya with those of Walmsley in view of Gormish in further view of Menezes because doing so provides a further means to recognize and authenticate a vendor module.

### ***Response to Arguments***

Applicant's arguments, see Remarks, filed 5/20/05, with respect to the rejection(s) of claim(s) 1 under Walmsley have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made.

### ***Conclusion***

This action has been made non-final.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Schubert whose telephone number is (571) 272-4239. The examiner can normally be reached on M-F, 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emmanuel Moise can be reached on (571) 272-3865. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**EMMANUEL L. MOISE**  
**SUPERVISORY PATENT EXAMINER**